

WHAT IS CLAIMED IS:

1. A method of simulating the economics of airlines, comprising the steps of:

providing processing means,

establishing an agent-based air carrier service evolution model (ACSEM) and processing said ACSEM on said processing means through the steps of:

(a) entering information concerning bankrupt airlines, newly created airports, and financial conditions at each airline;

(b) individually setting and modifying at least one of the following parameters according to a desired profit for each airline:

fares per airline and per origin-destination;

aircraft size per airline, per aircraft;

scheduled departure per airline, per aircraft, per departure;

fraction of seats reserved for

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business, per airline, per itinerary leg; and
cycles around itinerary, per airline,
per aircraft;

(c) simulating at least one of the following
conditions and modifying said at least one condition
according to a predetermined profit margin of each airline:

 sell aircraft;

 buy aircraft;

 shorten itinerary; and

 lengthen itinerary;

(d) entering information concerning a newly
established airline;

(e) for each airline, including said newly
established airline, determining scheduled flights
available to fly from a point of departure to a point of
destination;

(f) for each said airline, including said
newly established airline, entering information concerning
passenger demand;

(g) entering information concerning leisure

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passengers and business passengers;

(h) cyclically simulating a day's traffic at predetermined time intervals for each of said airlines and each of said aircraft, comprising the steps of:

requesting what is the state of the aircraft,

exercising a simulated action in accordance with the state of the aircraft, and

repeating said steps of the simulating a day's traffic, each predetermined period of time; and

(i) repeating the steps a-h in sequence to maximize profit of the airline.

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2. The method of Claim 1, further including the steps of:

before the step (a), entering in said processing means information concerning current airline structure.

3. The method of Claim 1, wherein in the step (a), said information concerning newly created airports includes place and date of establishing the new airports.

4. The method of Claim 1, wherein in the step (a), said information concerning newly created airports includes anticipation parameters.

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5. The method of Claim 1, wherein in the step (a), said information concerning financial conditions at each airline includes information on opportunity to sell airport offices and aircrafts.

6. The method of Claim 1, wherein in steps (b) and (c), modifying of each of said parameters and each of said conditions is performed individually while holding the other of said parameters constant.

7. The method of Claim 1, wherein in the step (f), the information concerning passenger demand is entered as explicit data.

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8. The method of Claim 1, wherein in the step (f),
the information concerning passenger demand is generated by
said processing means in accordance with a predetermined
statistical model.

9. The method of Claim 1, wherein in said step (h),
said states of the aircraft include:

boarding;
request take-off;
take-off;
enroute;
request landing;
landing; and
idle.

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10. The method of Claim 9, wherein said step of requesting the state of the aircraft is repeated each minute.

11. The method of Claim 9, wherein in the state "boarding", the simulated action includes boarding of passengers with tickets of this flight.

12. The method of Claim 9, wherein in the state "request take-off", the simulated action includes granting take-off depending on capacity of the airport and demand.

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13. The method of Claim 9, wherein in the state "take-off", the simulated action includes paying take-off fee.

14. The method of Claim 9, wherein in the state "enroute", the simulated action includes paying enroute fee, based on fuel consumption and reflecting area congestion.

15. The method of Claim 9, wherein in the state "landing", the simulated action includes disembarking passengers and collecting fares with discount to penalize late arrival.

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